



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------------|
| 10/723,771 | 11/26/2003 | Fu-Hsin Chen | TSM03-0586 | 9697 |
| 43859 | 7590 | 05/20/2005 | | |
| EXAMINER | | | | LINDSAY JR, WALTER LEE |
| ART UNIT | | | | PAPER NUMBER |
| | | | | 2812 |

DATE MAILED: 05/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|--------------------------------------|---|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/723,771 Walter L. Lindsay, Jr. | CHEN ET AL.  |
| | Examiner | Art Unit |
| | | 2812 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 19-28 is/are withdrawn from consideration.
- 5) Claim(s) 15-18 is/are allowed.
- 6) Claim(s) 1,2 and 5-11 is/are rejected.
- 7) Claim(s) 3,4 and 12-14 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>3/22/2004</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to an Election filed on 2/23/2005.

Currently, claims 1-28 are pending. Claims 19-28 have been withdrawn from consideration.

Election/Restrictions

1. Applicant's election without traverse of claims 1-18 in the reply filed on 2/23/2005 is acknowledged.
2. Claims 19-28 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected device, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 2/23/2005.

Specification

3. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1,2 and 5-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Chu (U.S. Patent No. 6,297,108 dated 10/2/2001).

Chu shows the method as claimed in Figs. 3 to 9 and corresponding text as: providing a substrate (60) comprising an isolation region (74) and an active region (col. 3, line 66-col. 4, line 6); forming a first doped region (73) in the active region of the substrate with a first plurality of ions (col. 3, lines 54-65); driving in the ions of the first doped region further into the substrate to enlarge the first doped region (75) and to make boundaries of the first doped region graded (col. 3, line 66-col. 4, line 6); forming a gate electrode (78) over the substrate after the driving in step, wherein at least part of the gate electrode is located in the active region, and wherein at least part of the gate electrode extends over a part of the first doped region (col. 4, lines 15-24); forming a spacer (80) along edges of the gate electrode to form an intermediate structure (col. 4, lines 25-36); and forming a second doped region (81) with a second plurality of ions within the first doped region, wherein a gate-side boundary of the second doped region is separated from a closest edge of the gate electrode by a first spaced distance, wherein the gate-side boundary of the second doped region is separated from a closest edge of the spacer by a second spaced distance, the second spaced distance being less than the first spaced distance (col. 4, lines 15-24) (distance not specified)(claim 1). Chu teaches forming a first mask layer (68) over the substrate, wherein the first patterned mask layer has a first opening (69) formed therein at a location in the active region, wherein the forming of the first doped region comprises implanting the first plurality of ions into the substrate at the first location through the first opening (col. 3, lines 40-53) (claim 2). Chu teaches that the driving in step is performed at a temperature between about 1000 and about 1200°C (col. 3, line 66-col. 4, line 6) (claim

5). Chu teaches that the isolation region has a field oxide structure (col. 3, line 66-col. 4, line 6) (claim 6). Chu teaches that the isolation region has a shallow trench filled with insulating material (col. 3, line 66-col. 4, line 6) (claim 7). Chu teaches that the removing of the first patterned mask layer occurs before the driving in step (col. 3, lines 44-65) (claim 8). Chu teaches that the removing of the first patterned mask layer occurs after the driving in step (col. 3, lines 44-65) (claim 9). Chu teaches that the removing of the first patterned mask layer occurs during the driving in step (col. 3, lines 44-65) (claim 10). Chu teaches that the first patterned mask layer comprises photoresist material (col. 3, lines 44-65) (claim 11).

Allowable Subject Matter

6. Claims 3, 4 and 12-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claims 15-18 are allowed.

8. The following is a statement of reasons for the indication of allowable subject matter: the prior art, either singly or in combination fails to anticipate or render obvious, the limitations of:

...forming a second patterned mask layer over the intermediate structure, wherein the second patterned mask layer has a second opening formed therein at a second location in the active region, and wherein the second location is located within the first location, as required by claim 3, as it depends from claim 2, and as required by claim 15.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter L. Lindsay, Jr. whose telephone number is (571) 272-1674. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael S. Lebentritt can be reached on (571) 272-1873. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Walter L. Lindsay, Jr.
Examiner
Art Unit 2812

W.L.
Walter L. Lindsay Jr.
May 13, 2005